

REMARKS

Claims 1-11 are pending in the application, of which claims 1, 5, and 6 are independent. In the Official Action of May 6, 2003, the Examiner rejected claims 1-11. The Examiner rejected claims 1, 2, and 4 under 35 U.S.C. § 102(b) and claim 5 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,518,597 ("Storer, et al."). The Examiner rejected claims 3 and 6-9 under 35 U.S.C. § 103(a) as being unpatentable over *Storer, et al.* in view of U.S. Patent No. 5,480,527 ("Welty"). The Examiner rejected claim 10 under 35 U.S.C. § 103(a) as being unpatentable over *Storer, et al.* in view of EP Patent No. EP 0725424 A1 ("Murakami, et al."). The Examiner rejected claim 11 under 35 U.S.C. § 103(a) as being unpatentable over *Storer, et al.* in view of *Welty* and further in view of *Murakami, et al.* The Applicant has amended claims 1, 5, and 6 and respectfully traverses these rejections. No new matter has been added by these amendments.

Claim 1 patentably distinguishes the present invention from *Storer, et al.* in that it recites, for example, a vacuum arc evaporation source, comprising a plurality of cathodes, each made of different materials, and a plurality of insulating layers for insulating the plurality of cathodes from each other, the plurality of cathodes and the plurality of insulating layers arranged radially in alternating layers, wherein said plurality of cathodes are evaporated by vacuum arc discharge.

Claim 5 patentably distinguishes the present invention from *Storer, et al.* in that it recites, for example, a film formation apparatus for forming a laminate film including a plurality of heterogeneous films on a surface of a substrate, the apparatus comprising a vacuum arc evaporation source having a plurality of cathodes, each made of different

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materials; and a plurality of insulating layers for insulating the plurality of cathodes from each other; the plurality of cathodes and the plurality of insulating layers arranged radially in alternating layers; wherein said plurality of cathodes are evaporated by vacuum arc discharge an arc power supply for supplying arc discharge power to said plurality of cathodes of said vacuum arc evaporation source, and a switch for switching the arc discharge power of said arc power supply among the plurality of cathodes of said vacuum arc evaporation source.

Claim 6 patentably distinguishes the present invention from *Storer, et al.* in that it recites, for example, a film formation apparatus for forming a laminate film including a plurality of heterogeneous films on a surface of a substrate, the apparatus comprising a vacuum arc evaporation source having a plurality of cathodes, each made of different materials; and a plurality of insulating layers for insulating the plurality of cathodes from each other; the plurality of cathodes and the plurality of insulating layers arranged radially in alternating layers; wherein said plurality of cathodes are evaporated by vacuum arc discharge, and a magnetic filter for generating a magnetic field to curve plasma containing material from said vacuum arc evaporation source so as to remove coarse particles from the plasma and introduce the plasma into vicinity of the substrate.

In contrast to claims 1, 5 and 6, *Storer, et al.* discloses a cathode in the form of a ring with an opening in which the object to be coated is positioned. Although a single ring-shaped cathode is preferred, the cathode can be a series of thin rings, separated by spacers, or it can be in the shape of a helix. (*Storer, et al.* col. 9, lines 51-65.) Further, the cathode assembly disclosed in *Storer, et al.* can include more than one axially spaced cathode, each with a central axis positioned in a coaxial relationship.

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(*Storer, et al.*, Fig. 5; col. 10, lines 23-37.) In sum, *Storer, et al.* discloses a cathode assembly consisting of a series of axially arranged ring-shaped cathodes separated by insulating layers with an opening through which the object to be coated, for example, a fiber, is passed. (*Storer, et al.* Fig. 5; col. 9, lines 51-65.) *Storer, et al.* does not disclose a plurality of cathodes and a plurality of insulating layers arranged radially in alternating layers, as recited in claim 1 and similarly in claims 5 and 6.

Welty fails to cure the defects of *Storer, et al.* *Welty* discloses a single rectangular shaped cathode mounted in an angled duct. (*Welty*, col. 5, lines 24-28.) This single cathode is made of a single material -- carbon. (*Welty*, Fig. 2; col. 9, lines 10-25.) It is the rectangular shape of the cathode and plasma duct, and not the composition of the cathode itself that is disclosed in *Welty*. (*Welty*, Fig. 2; col. 9, lines 10-30.) *Welty* does not disclose a plurality of cathodes and a plurality of insulating layers arranged radially in alternating layers, as recited in claim 1 and similarly in claims 5 and 6.

Murakami, et al. suffers from similar defects. *Murakami, et al.* discloses a single cathode 12 mounted on a flange. (*Murakami, et al.*, col. 4, lines 49-52.) This cathode is made of a single metal, such as titanium. (*Murakami, et al.*, col. 4, lines 33-35.) The periphery of the cathode is covered with a ring-shaped shield plate used to spread the arc. (*Murakami, et al.*, col. 5, lines 19-27.) *Murakami, et al.* does not disclose a plurality of cathodes and a plurality of insulating layers arranged radially in alternating layers, as recited in claim 1 and similarly in claims 5 and 6.

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Claims 2-4 and 7-11 are allowable, at least for the reasons above regarding claims 1, 5, and 6 and by virtue of their dependency upon those claims. Accordingly, the Applicant respectfully requests withdrawal of the rejection of claims 2-4 and 7-11.

Applicant respectfully requests that this Amendment under 37 C.F.R. § 1.116 be entered by the Examiner, placing claims 1-11 in condition for allowance. Applicant submits that the proposed amendments of claims 1, 5, and 6 do not raise new issues or necessitate the undertaking of any additional search of the art by the Examiner, since all of the elements and their relationships claimed were either earlier claimed or inherent in the claims as examined. Therefore, this Amendment should allow for immediate action by the Examiner.

Furthermore, Applicant respectfully points out that the final action by the Examiner presented some new arguments as to the application of the art against Applicant's invention. It is respectfully submitted that the entering of the Amendment would allow the Applicant to reply to the final rejections and place the application in condition for allowance. Finally, Applicant submits that the entry of the Amendment would place the application in better form for appeal, should the Examiner dispute the patentability of the pending claims.

In view of the foregoing, Applicant respectfully submits that all the pending claims are patentable over the cited references. The preceding arguments are based only on the arguments in the Official Action, and therefore do not address patentable aspects of the invention that were not addressed by the Examiner in the Official Action. The claims may include other elements that are not shown, taught, or suggested by the cited art.

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Accordingly, the preceding argument in favor of patentability is advanced without prejudice to other bases of patentability.

Please grant any extension of time required to enter this response and charge any additional required fees to our Deposit Account No. 06-0916.

Respectfully submitted,

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